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8 U.S. ENVIRONMENTAL PROTECTION AGENCY
9 REGION 10
10 SEATTLE, WASHINGTON 98101

11 APPLICATION OF)
12 ARCO Alaska, Inc.) No. PSD-X82-01
13 P.O. Box 360) APPROVAL OF
14 Anchorage, Alaska 99510) APPLICATION
15) TO CONSTRUCT
16)

17 Pursuant to the Agency regulations for the Pre-
18 vention of Significant Deterioration of Air Quality (PSD)
19 set forth at Title 40, Code of the Federal Regulations,
20 Part 52 and based upon the complete application submitted
21 on May 11, 1981 by ARCO Alaska, Inc., the Regional
22 Administrator now finds as follows:

23 FINDINGS

- 24 1. ARCO Alaska, Inc. (hereafter referred to as ARCO)
25 proposes to install additional gas-fired turbines and
26 heaters in the oil field at Kuparuk, Alaska.
27 2. An analysis of projected emissions indicates that
28 this project has the potential to emit more than the EPA
29 significant levels for nitrogen oxides (NO_x), parti-
30 culate matter (PM), carbon monoxide (CO), sulfur dioxide
31 (SO₂), and hydrocarbons (VOC) and is therefore subject
32 to PSD review for those pollutants.

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3. The proposed modification is located in an area designated as "Class II" under Section 162(b) of the Clean Air Act.

4. Modeling analysis of NO_x, PM, CO, SO₂ and VOC has been conducted and demonstrates that while emissions of these pollutants will increase, the modification will not cause any violations of the applicable National Ambient Air Quality Standards or PSD increments so long as the facilities are operated in accordance with the conditions specified below. With the application of best available control technology, as required by Section 165(a)(4), operation of the proposed turbines and heaters will meet the applicable PSD requirements.

Accordingly, it is hereby determined that, subject to the conditions set forth below, ARCO Alaska, Inc. will be permitted to install the subject turbines and heaters at Kuparuk, Alaska.

APPROVAL CONDITIONS

1. Emissions of nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO₂) and hydrocarbons (VOC) shall not exceed the following:

EMISSION LIMITATIONS

<u>Equipment</u>	<u>Pollutant</u>	<u>Tons/Year</u>	<u>Performance Limit</u>
Turbines	NO _x	13,730	150 (14.4/Y)ppm*
	CO	2,730	109 lb/10 ⁶ scf of fuel used
	PM	293	10% opacity
	SO ₂	72	
	VOC	50	
Process Heaters	CO	42	0.018 lb/10 ⁶ BTU
	PM	39	
	SO ₂	9	

Test Operation with 37.50
Ruparuk
Bohn Heater

Equipment	Pollutant	Tons/Year	Performance Limit
> 43x10 ⁶ BTU/hr	NO _x	384	0.18 lb/10 ⁶ BTU
< 43x10 ⁶ BTU/hr	NO _x		0.10 lb/10 ⁶ BTU

Waste incinerator - see Appendix A

*NO_x emission factor for gas-fired turbines is modified by an efficiency factor Y (manufacturer's rated heat rate at rated peak load) which cannot exceed 14.4

kilojoules/watt-hour based at 15% oxygen on a dry basis.

2. With the exception of NO_x, CO, PM, SO₂ and VOC

increases in potential emissions of any pollutant

regulated under the Clean Air Act resulting from this

operation will be less than the significant levels

(Section 52.21(b)(23)(i)).

3. ARCO shall notify Alaska Department of Environmental

Conservation (ADEC) of any occurrence of any emissions in

excess of limits specified in Condition Numbers 1 and 2

above; such notification shall be forwarded to ADEC in

writing in a timely fashion and in each instance no later

than ten (10) days from the date of such occurrence. The

notification shall include an estimate of the resultant

emissions and a narrative report of the cause, duration

and steps taken to correct the problem and avoid a

recurrence. ARCO shall contemporaneously send a copy of

all such reports to EPA.

4. This approval shall become void if on-site con-

struction is not commenced within eighteen (18) months

after receipt of the approval or if on-site construction

once initially commenced is discontinued for a period of

eighteen (18) months.

5. As approved and conditioned by this permit any

construction, modification, or operation of the proposed

1 facility shall be in accordance with the application which
2 resulted in this permit. Nothing in this permit shall be
3 construed to relieve ARCO Alaska, Inc. of its obligations
4 under any State or Federal laws including Section 303 and
5 114 of the Clean Air Act.

6 6. Compliance with emission limitations shall be
7 demonstrated by source tests and a program of emission
8 monitoring as described below:

9 a. Compliance Demonstration:

10 Compliance testing shall be conducted within
11 60 days after achieving the maximum production rate at
12 which the turbines or process heaters will be operated but
13 not later than 180 days after startup of the specific
14 emission source. The NSPS testing requirements for NO_x
15 from gas turbines (40 CFR 60.335) shall be followed. The
16 Company may submit for EPA approval an alternative test
17 plan for the gas turbines addressing such alternatives as
18 factory testing rather than on-site testing and testing of
19 a certain proportion of the gas turbines from each model
20 group rather than each individual gas turbine. EPA Method
21 7 shall be used for NO_x from the process heaters. Only
22 one of each kind of process heater must be tested. The
23 Company shall submit a test plan to EPA for approval to
24 demonstrate that the process heater tested is repre-
25 sentative of the process heaters for which testing is
26 exempted. No compliance testing is required for CO.

27 b. Emission Monitoring:

28 In addition to the NSPS requirements (40 CFR
29 60.334) one of the following monitoring schemes is
30 required: (a) a continuous monitoring system shall be
31

1 installed to monitor CO or O₂ for all gas-fired process
2 heaters. These monitors shall comply with the specifi-
3 cation requirements in Appendix B of 40 CFR Part 60; or
4 (b) a periodic monitoring program for the process heaters
5 using a portable CO or O₂ analyzer. The Company shall
6 submit a monitoring plan to EPA for approval describing
7 the details of the program such as monitoring frequency,
8 proposed instrumentation, quality assurance procedures,
9 and recordkeeping.

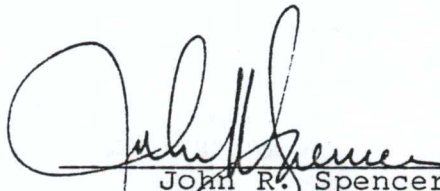
10 c. The Company shall report any use of the COT
11 flare, including the time, duration, and reason for that
12 use. This data shall be available to EPA upon request and
13 maintained for a period of 2 years from the date recorded.

14 7. EPA Regional Office and ADEC shall be notified of
15 the commencement of construction and the start-up date
16 within thirty (30) days of the date of their occurrence.

17 Access to the source by EPA or State regulatory
18 personnel will be permitted upon request for the purpose
19 of compliance assurance inspections. Failure to allow
20 such access is grounds for revocation of this permit.

21
22
23 29 DEC 1981

24 _____
Date

25 
26 John R. Spencer
27 Regional Administrator
28
29

Appendix A

Emission Limitations

<u>Equipment</u>	<u>Pollutant</u>	<u>Ton/Year</u>	<u>Performance Limit</u>
Waste incinerator	NO _x	8	0.01 gr/dscf at 12% CO ₂ , and 10% opacity
	CO	17	
	PM	5	
	SO ₂	4	
	VOC	0.5	